# Graphify GUI guide

## What is Graphify

Graphify was made to help scientist easily and accurately extract data points from graphs and lines present in figures and image files within academic papers or articles.

Although other similar software exists, the aim of Graphify is to minimize overhead and preprocessing required to accomplish this task.
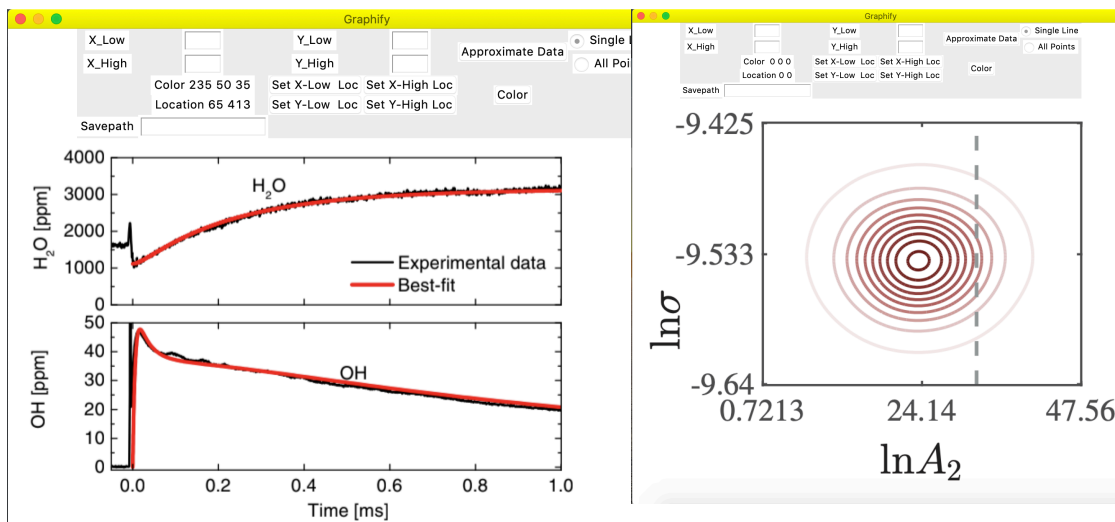


*Figure 1. (left) Graphify single line detection (right) Graphify detection of non-strictly linear data*

## What works and what doesn't

Unfortunately Graphify currently does not support data extraction from dotted or patterned lines. This feature is currently being developed. For now, only graphs with color differentiation work with Graphify.

To prepare images to use Graphify, please delete any legends that contain colors or labels within the graph area that may interfere and confuse the program. For example, the legend and H20 label in the upper graph of Figure 1 Left may interfere with the extraction.

## Steps to use Graphify

Run Graphify in command line as follows

> python3 graphify.py <path-to-image>


Graphify relies upon 3 core types of user inputs in order to extract data.

1. Axis locations- The points at which the axis scale starts and ends

2. Axis values- The values of the start and endpoint of the axis determined prior

3. Color of line- The color value of the line that is concerned

The user can input these key indicators by the following:

First, left-click the selected location for the start of the axis on either of the X-axis or Y-axis of the graph.

When you click the location, the labels in the top of the window for Color # # # and Location # # # should change as seen in Figure 2
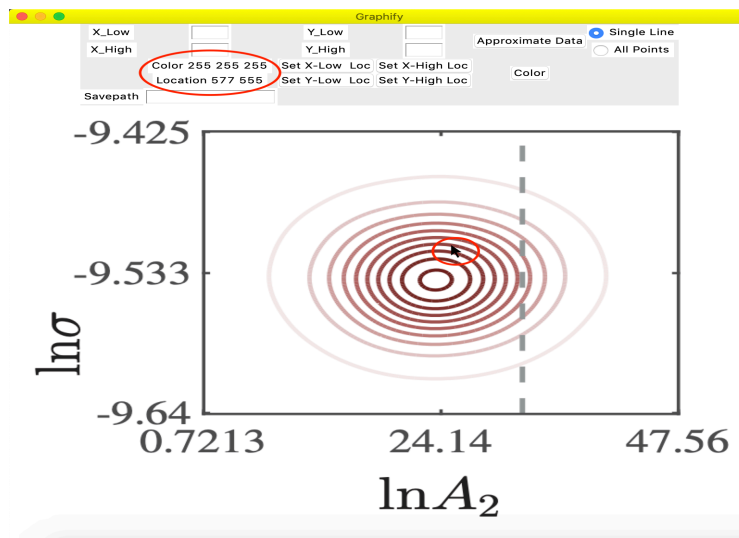


*Figure 2. Left-clicking will set location and color to the clicked area's color and location*

After selecting the point, hit the set X-Low, X-High, Y-Low, and Y-High, or the Color buttons

X-Low/High indicate respectively the lower value axis start and higher valued axis end for the X-axis with same applying for Y-axis with Y-Low/High

Color will set the color from the specified location

Following these point selections, specify from the axis the X_Low and X_High values in the text boxes above the previous buttons and specify the save location

Additionally you can change settings to allow Single Line or All points to be recorded

From this you can then click the "approximate the data" button and the figure will plot and the data saved at the specified location as a csv